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ABSTRACT

This fact sheet discusses the importance of literacy for individuals who are deaf-blind, the social functions of reading and writing, and conditions necessary for the development of literacy. Strategies for promoting literacy among this population are described and include: (1) invite children and adults who are deaf-blind to observe as you use the computer, read the newspaper, write notes, read signs, and engage in other literacy activities; (2) arrange specific opportunities for the child or adult to touch adults or young people as they read Braille; (3) read stories to children who are deaf-blind; (4) use accessible labels on rooms, shelves, coat hooks and furniture; (5) pause a moment as a child notices a label, be aware of the child's reaction, and make a simple comment; (6) pause often during story-reading times, notice the child's reactions, and respond to them; (7) use dialog journal with a child who is deaf-blind and who has some beginning reading and writing skills; (8) respond conversationally to any drawing, proto-writing, or writing attempt; (9) accumulate Braille books and other materials; (10) make a story box to accompany a Braille or print story; and (11) adapt storybooks by using textured pictures. (Contains 16 references.) (CR)

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Literacy for Persons Who Are Deaf-Blind. DB-LINK Fact Sheet.

January 2000

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The National Information Clearinghouse on Children Who Are Deaf-Blind

Helen Keller National Center
Perkins School for the Blind
Teaching Research

Literacy For Persons Who Are Deaf-Blind

By Barbara Miles, M.ED. *January 2000*

Imagine this: In the living room of the Perez house it is getting close to bedtime. Manuel, 6, and his sister Julia, 4, are asking for their usual bedtime story. Mrs. Perez goes to get a storybook from the basket near the couch. Then she hears the cries of her 2-year-old, José, who is lying in a crib on the other side of the room. She goes to the crib and bends down to pick up José, still holding the book. Manuel and Julia are restless, clamoring for their story. Mrs. Perez is torn. She imagines that José wants to belong to this nightly ritual. But José is deaf-blind. He can't see the book, or hear the words as she reads them. She can't imagine how to include him, or what use it would be anyway. She doesn't know any other children who are deaf-blind, and she hasn't considered reading to be a possibility for him (or for anyone who is deaf-blind, for that matter).

But tonight she senses this young child's desire to be included, and she wants him with her and the other children. So, for the first time, she brings José into this family ritual. She holds him on her lap as Julia and Manuel cuddle on either side of her on the couch. Mr. Perez comes in from work just then and joins them. After greeting his wife and two oldest children, he sits next to Manuel. He reaches over to invite José to touch his beard, his usual way of greeting his son who cannot see or hear. Then he rests his hand lightly on José's shoulder so José knows of his continuing presence. José quiets when he feels himself settled into his mother's lap with his family around. He senses his mother's breathing and feels the vibrations of sound in her chest as she reads. José's hand can feel his sister's and brother's arms as they alternately turn each page — their long-established routine. José can smell the paper of the bock — he buries his head in the crevice between the pages several times, and smiles with delight.

This evening is José's first experience with literacy. In the nights that follow, Mr. and Mrs. Perez regularly include José. Over time, the experience gains more and more meaning for him. And then, as a result of help from educators of children who are deaf-blind, the Perez family is able to make and acquire adapted materials, including simple books that have both print and braille, and that have tactile pictures that José can feel. Manuel and Julia sometimes help make the pictures in their own favorite books accessible to José by pasting material on them, and by using pipe cleaners and glue to make outlines that his little hands can feel. Over time, too, the entire family learns sign language, so they can translate the language of the stories that José cannot hear into a form he can feel. Mrs. Perez's initial instinct to include José in this family story time blossoms into a lifetime of reading and writing experience for this child who is deaf-blind.

The Importance Of Literacy For One Who Is Deaf-Blind

Each person who is deaf-blind—whatever her sensory, mental, and physical abilities—deserves the opportunity to become literate in all the ways of which she is capable. Reading and writing are especially crucial for one whose world is narrowed because of vision and hearing losses. Literacy can enable such a person to exchange information and ideas, and develop relationships that would otherwise be out of reach.

Literacy involves the use of language, whether the language is in print or in braille. Although not all persons with deaf-blindness will achieve formal literacy, it is important to consider the communication value that aspects of early literacy can provide. Being able to "read" a schedule that consists of objects arranged in the order of the events they represent, for example, can be of great benefit to someone who is deaf-blind, even if that person cannot read print or braille. Likewise, being able to point to a picture from a menu of pictures in order to express a desire or make a comment can considerably improve the

life of a person who is deaf-blind with little formal language.

What is more, society deserves the increased opportunity to get to know the thoughts, feelings, and ideas of persons who are deaf-blind. A person who is deaf-blind and who can read and write or who can use an object or picture communication system can communicate more and more with increasing numbers of persons in their immediate and distant environments. This person also has the potential of communicating with increasing precision and depth. Getting to know persons who are deaf-blind is likely to benefit many members of society whose experience of the world is limited to vision and hearing, and who thereby miss the uniqueness of experiencing the world primarily through touch.

Picture a woman who can neither see nor hear. Imagine too that she can read and write and that she has access to a computer with braille output and input devices. This woman is able to communicate with people all around the world through the Internet and has access to vast stores of information. Given the availability of today's technology, while she is on-line this person is practically not handicapped. Her ability to read and write is her key to relationships and interactions undreamed of even a decade ago. Perhaps, just as importantly, it enables others, who might not otherwise have the opportunity, to get to know her.

Likewise, a person who is deaf-blind and who has neither the cognitive ability nor the interest in using the Internet can benefit from literacy in countless other ways. A picture/print or object/braille communication system may allow him to communicate his desires and ideas to people around him; picture/print/braille recipes may enable him to cook independently; being able to read labels on food items may give him many choices at the store; writing and drawing in a daily journal may enable him to express himself, reflect upon his own past experiences, and share experiences with people not present at the time they occurred. These are only a few of the possibilities.

The opportunities that literacy provides to persons who are deaf-blind, and thereby to society at large, are vast. What is more, opportunities are increasing all the time as technology develops and as people—parents, educators, therapists, and people who are deaf-blind themselves—broaden their ideas of what literacy offers to people with limited vision and hearing.

What Is Literacy?

Literacy generally refers to the ability to read and write. Reading and writing are symbolic systems that allow people to receive and send information across distances of time and space. Reading and writing have contributed significantly to the development of societies, cultures, and technologies. They allow people to transmit knowledge from generation to generation and from place to place.

There is now a field of educational research devoted to emergent literacy. It considers both reading and writing development from the child's perspective. Bloome and Green (1984) stated "Literacy is seen not just as a cognitive process, but also as a social, psychological, and linguistic process" (Dziwulski, 1992, p. 3).

When we think about literacy as it relates to people who are deaf-blind, it is important that we expand our conventional notions of reading and writing to include not only emergent literacy experiences, but also to include the various modes of literacy. If we conceive of literacy as the ability to read and write newsprint-sized print, for example, our conception will automatically exclude most persons with deaf-blindness. For a definition of deaf-blindness, refer to the DB-LINK publication "Overview on Deaf-Blindness." Fortunately for all people who are totally blind, Louis Braille invented a method of reading and writing that does not depend upon sight. And fortunately for people with low vision, engineers have invented a variety of large-print technologies. We, as educators, friends, and family members of persons who are deaf-blind, are challenged to become equally visionary when conceiving of reading and writing systems and ways of educating that can accommodate persons with deaf-blindness. Some of these people have unique visual difficulties, some have uniquely developing language abilities, some have cognitive challenges, and others have physical limitations. None of these should be a barrier to the development of some kind (or kinds) of literacy.

When a teacher or a family uses an object schedule system (sometimes referred to as a "calendar box") with a child who is deaf-blind, that person is using a kind of proto-literacy to communicate with the child. A series of objects, placed in boxes or hung on the wall, and representing a corresponding series of activities, is a kind of calendar which the child without vision or hearing can read. As her hands touch each object from left to right, she gets information about the fu-

ture, what will happen that day (or week, or month, depending on the size of the schedule). As she develops more abstract cognitive skills, these concrete objects may be paired with or replaced with pictures, print, or braille. Likewise, if she spontaneously goes to the calendar and picks up a ball and carries it to her teacher as an indication that she would like to go out and play, we might say that she is engaging in a kind of proto-literacy (or even proto-writing) behavior. She has read which symbol represents her desire and has brought that symbol to the teacher to read. She is using a symbol to convey information about what she wants to happen in the future. And her life choices are considerably enriched by this kind of literacy. People hoping to enlarge literacy opportunities for people who are deaf-blind need to continue to invent ways to make literacy available. The possibilities are countless.

The Social Functions Of Reading and Writing

Literacy never exists in a vacuum. People read and write for many purposes, most of them social. At home bedtime stories provide young children with a foundation for literacy. Even though they are not reading, they are learning the social value of the printed symbol and are beginning to understand that pictures and symbols convey information. They are also learning that reading these symbols is fun.

As we seek to share literacy skills with persons who are deaf-blind, we need to be aware of what purposes these skills will serve. We need to ensure access to as many of the functions of literacy in their lives as possible—comparable to the access that hearing-sighted people have. We need a menu of possibilities.

Think about the past few weeks of your life. You can undoubtedly think of many ways in which you have used reading and writing. People who are deaf-blind deserve to use reading and writing in a corresponding variety of ways. Here is a beginning list of the pragmatic functions of reading and writing, together with some examples of each function. As you read the list, you might think about a person who is deaf-blind and consider how that person could benefit from each of these uses if they were made available by means of adaptations.

- **Acquiring or transmitting knowledge or information:** books (nonfiction, reference); newspapers; environmental print (road signs, advertisements, etc.); Internet Websites; magazines; movie credits; telephone directories; restaurant menus; song lyrics; music transcription
- **Organizing and supporting memory:** schedules; calendars; grocery lists; shopping lists; to-do lists; histories; diaries; labels in photograph albums; transcripts of presentations; minutes of meetings
- **Entering or creating a fantasy world:** novels; stories; comic books; poetry
- **Self-expression:** journals; diaries; poetry; editorials; t-shirts or hats with messages; bumper-stickers; signs and placards; artistic expression with words
- **Entertainment:** novels; poetry; comic books; magazines; Internet Websites; computer games; computer chat rooms
- **Problem solving or problem posing:** crosswords; word problems; math problems; office memos; journal entries; advice columns
- **Financial negotiations:** money; bills; checks; contracts; wills; price-tags; receipts; bank statements
- **Creating and maintaining relationships:** letters; notes; greeting cards; computer e-mail; computer chat rooms; TTY phones
- **Dealing with emotions:** journals; diaries; notes; letters; advice columns; stories
- **Conveying or understanding instructions:** recipes; instructions for tools, devices, and appliances; directional signs; maps; computer graphics; ATM instructions; test instructions; game rules
- **Making or understanding announcements:** signs; posters about events; movie theater announcements; wedding or party invitations; brochures about events; leaflets announcing sales
- **Persuading people to do or buy things:** newspaper and magazine ads; billboards; TV ads; product logos; political ads; classified ads; product catalogues; banners
- **Identifying things or places:** street signs; labels on boxes, cans, packages; labels on pictures; titles on books; names on personal items, such as clothing, credit cards, library

cards; addresses on letters, e-mail, fax transmissions; labels on elevator buttons

- **Giving or receiving inspiration:** quotes; sermons; self-help books; refrigerator magnets with messages; greeting cards; sky-writing

(*Adapted from Dziwulski, 1992*)

Many educators of children and adults with severe or profound disabilities (including those who are deaf-blind) may discount some of these functions, thinking that they may not be possible or appropriate for children who have particular challenges. Self-expression, entering fantasy worlds, and maintaining relationships are several functions that are frequently absent from curricula for children who are deaf-blind or who have severe disabilities. None of these functions need be inaccessible to any child. Our own ingenuity, creativity, and determination will be the keys that will allow a child access to any of these functions of literacy. Without exposure to them, it is impossible for a child to acquire them.

If you are a teacher or a parent reading this list, you might think also about how to expose the child or adult who is deaf-blind to an increasing number of these uses of literacy. You may draw her attention to a t-shirt logo the next time you see one, or you may show her a newspaper ad, or a wedding invitation, and explain what each says in a way that the child may understand. Even a child who is totally blind can benefit from these gestures and the simple explanations that accompany them. In fact, being shown these things by an adult, and having them explained, is the only way in which many children and adults who are deaf-blind will ever know that they exist.

Conditions Necessary For The Development Of Literacy

There have been many interesting recent developments in the teaching of literacy to children and adults with severe special needs, as well as those with hearing impairments and those with linguistic and cultural differences. Many of these developments have important implications for helping children and adults who are deaf-blind learn to read.

This recent research and longtime experience point to several basic conditions necessary for the development of literacy. Each of these conditions implies a variety of possible opportunities that can, and should, be made available to people with vision and hearing impairments.

Observation of significant people reading and writing for a variety of purposes

Children with good vision encounter print and its uses from the day they are born. This is especially true in highly literate societies and in families where literacy is central. Children in such environments routinely see people reading and writing for many different purposes. It is widely acknowledged that children who grow up in literate families generally have good reading skills; this is probably due to the motivation instilled in a child who sees the people he interacts with and admires using reading and writing regularly.

A child who is deaf-blind usually does not have opportunities to observe people reading and writing unless they are specifically provided. Here are some ideas for ways to create these experiences:

- Invite children and adults who are deaf-blind to observe as you use the computer, read the newspaper, write notes, check calendars, read signs, and engage in other literacy activities. Such observation will need to be tactual for the child who has no vision. Invite the child to "look" again and again. Place your hand slightly under the child's hand (so the child's hand remains free) and move toward what is happening, so the child is invited to explore both the materials and the actions. For specific ways to do this refer to the DB-LINK publication "Talking the Language of the Hands to the Hands." Invite a child with low vision to witness these activities by being physically close. Be sure also to discuss what you are doing ("I'm checking my calendar. This is my calendar.").
- Arrange specific opportunities for the child or adult who is blind to touch adults or young people as they read braille. A child who is blind needs to be exposed not only to braille itself, but also to the act of reading braille, and to its uses. This exposure must happen again and again in the context of meaningful relationships. The child must touch, again and again, the fingers of people she knows and admires as they read and write braille words, sentences, magazines, labels, and books. Only in this way will she be enabled to build a social concept of literacy—a concept that comes so naturally to the child with vision. These opportunities to observe people using braille will motivate her to read and write.

- Read stories to children who are deaf-blind, using speech and/or sign language as appropriate, with support of print, braille, related objects, and pictures (including tactile pictures), as appropriate to the child. Adapted materials (see below) will enable a child who is blind or who has low-vision to follow along tactually or to handle related materials that will give concrete references to the language in the stories. (Useful suggestions for reading to children who are deaf can be found in the May/June 1999 issue of Perspectives in Education and Deafness.) Regular exposure to stories is important, as is repeating favorite stories or using predictable stories. All children like the sense of knowing and predicting. It encourages participation and involvement.
- During the course of each school day and each day at home notice all the many opportunities for children to see or touch print or braille. In the classroom, use accessible labels on rooms, shelves, coat hooks, and furniture, as well as object/picture/print/or braille schedules, lists, recipes and books. Long before a child is expected to read these things, he can benefit from observing others reading them and from seeing or touching these words naturally during the course of his daily routine. Make a practice of inviting children to be near as you use these forms of reading and writing.

Meaningful conversations during literacy experiences

Conversational interaction ensures that the development of reading and writing occurs within meaningful social contexts. It enhances the communication abilities of the child or adult and provides the teacher or parent with continuous feedback about the child's or the adult's understanding. Children who can see and hear have countless opportunities for conversations about the written word—as they are read stories by their parents or teachers, as they walk or drive by signs in the community and ask about them, as they observe Mother writing a grocery list and chime in with their preferences, as they talk to Father about a newspaper story he has just read, as they show their teacher a picture they have just drawn and explain the scribbles written above it, as they ask for help spelling a word in a story they are writing, and as they discuss their feelings about a book they are reading with their fellow classmates. Children who are deaf-blind need parallel opportunities for interactions around literacy experiences. These might include the following:

- Pause a moment as a child notices a label (in print, braille, tactual object or marker), be aware of the child's reaction, and make a simple comment in gesture, speech, and/or sign language, as appropriate. This comment may serve as the beginning of a short conversation. For example, the child touches a coat hook label. Teacher says, "Yes, this is your coat hook. Mine is over here"(showing child). Pause. Wait to see what the child does. (He touches another hook and label.) "That one is John's." Pause. And so on. Taking the time to make a small conversation each time the child has a literacy experience—even before the child is reading—will give the child many opportunities to build both concepts and relationships.
- Pause often during story-reading times, notice and respect the child's reactions, and respond to them. This will make the story times enjoyable for both adult and child and will build concepts and relationships. Often the reactions of the child who is deaf-blind—especially when the child has little language—will be gestures and facial expressions, or even as subtle as tension and relaxation of muscles. Mirror and comment on each of these responses so the child becomes engaged in a turn taking process as the story progresses. Reading the story is thus not something being "done to" the child, but is a mutual activity between teacher (or parent or friend) and child. Such a conversation might look like this: Sammy is sitting in Father's lap. A mirror is propped on the table in front of them so Father can see Sammy's face. Father reads print with his eyes and moves his fingers along the braille under the print, while Sammy's hand follows. Then he signs, "The bear is soft," Sammy's hands following the signs by resting lightly on his father's hands. Father then gives Sammy a soft teddy bear from the "story box" accompanying the book (see below, under accessible materials). Father waits to give Sammy time to respond. Sammy touches the bear's face, and begins fingering the plastic nose. Father notices and touches the nose along with Sammy, his finger following his son's. He signs "Bear's nose" as Sammy feels the signs. Then Father touches Sammy's nose and signs "Sammy's nose." Pause. Sammy reaches up toward his father's face. Father laughs and puts his hand lightly under Sammy's hand to invite him to follow as he touches his own nose. He signs, "Yes. Daddy's

nose." Then, back to the book. Father's hand again moves over the braille, with Sammy's hand following. Father speaks and signs, "The turtle is rough," and then gives Sammy a small plastic turtle with a rough shell. He again waits to see what Sammy will do. And so on...

- Use a dialogue journal with a child who is deaf-blind and who has some beginning reading and writing skills. A dialogue journal will allow her to express her own ideas freely and also to read the genuine response from her teacher about what she has written. Such a journal can be a conversation on paper that has short entries written every day, either in print or in braille, as the student requires. Entries can range from very simple to quite complex. The students should be equal initiators of the topics in these conversations; the teacher's entries will serve to confirm the student's ability to communicate in writing about something that really interests her. The teacher can also model good language in his responses and can continue the conversation in natural ways, with comments and questions about the child's ideas, as well as adding his own related topics (see Bailes, 1999).
- Respond conversationally (and encourage classmates to do the same) to any drawing, proto-writing, or writing attempt made by the child or adult who is deaf-blind. Bringing an object-symbol can be regarded as a kind of proto-writing. So can any scribbling or use of writing or braille materials. All drawings and attempts at drawing (including use of clay) are forms of self-expression which, when responded to with comments and interest, lay the foundation for the child's confidence in herself as a writer.

Accessibility of literacy materials

Accessibility includes the adaptation of materials to compensate for sensory losses and physical disabilities. It takes into account cognitive understanding and individual interests. Adapting books and materials for the individual's sensory, cognitive, and motor needs is necessary to give the child access to the information. And, as with oral and signed language, unless the child receives a great deal of accessible print or braille input, she cannot produce any meaningful output in print or braille. All children and adults need books that are interesting to them: books that have accessible print or braille, pictures, or tactile illustrations; books that are about subjects that are interesting; and books that use language that is appropriate to the child's or adult's individual level of understanding. To the extent that they are possible and practical, they also need accessible labels and other forms of all the pragmatic uses of literacy mentioned above.

Because each child and adult is so unique, many books and materials will need to be made or adapted specially (see the section below on individual experiences). The task of adapting books and materials is one that a teacher and child can often do together, or the child can do with another classmate. For example, the child can participate in brailling or printing words (or watch as the teacher does it), or in making and gluing tactile pictures to pages, or in the writing of the stories themselves. This participation serves to help the child understand how things are created, cuts down on out-of-class preparation time for the teacher, and gives classmates something to share and do together.

Accessibility also necessitates adapting the environment so the child or adult has the time and physical ability to interact with materials, as well as the social encouragement and motivation to do so. Here are some specific suggestions:

- Accumulate braille books and other materials and/or books-on tape if these are useful. The child also needs a slate and stylus and/or a brailler (see Materials).
- Make a "story box" to accompany a simple braille or print story. Dolls, toys, and other "props" related to story content can be kept in a box alongside the book, so that when the story is read, there are concrete representations of the characters and major items in the story. These will greatly facilitate the child's understanding of the story, and will also make conversational interaction much more likely and easy.
- Adapt storybooks by using textured pictures to help a young child read the pictures. For example, when reading the board book version of The Hungry Caterpillar, texture the caterpillar with felt. Every time the child touches the caterpillar, assume he is looking at the picture with his fingers (and with his eyes, if he has some vision). Comment on the caterpillar: "There's that hungry caterpillar." Pause and observe what the child does and respond to that. When parents read to young children, they often don't actually read the stories verbatim. They use the pictures in the storybook and often story time means quality social and cognitive time. This opportunity should also be available to children with deafblindness.

- Provide a child who has low vision with large-print materials and adaptations. Recent computer advances have made these adaptations much easier. A closed-circuit television (CCTV) available in the classroom can enlarge any print placed under it and is useful for many students with low vision. Often a black permanent marker is sufficient to make print accessible. Simply taping modified print and simplified sentences over the ones in a ready-made book can make it accessible for a child with low vision.
- Give props to a child with physical limitations to help her to handle reading materials by herself. A stand can hold a book at an appropriate angle on a wheelchair tray and will enable a child to see it well without needing someone to hold it for her. Page "fluffers" (bits of foam or other material glued to the edges of the pages to hold them apart) and/or tabs on each page can enable a child with limited physical dexterity to turn the pages of a book independently. Voice output switches can be used so a child who is non-speaking, hard-of-hearing, and motor involved can recite a line in a nursery rhyme or repetitive book.
- Supply appropriate writing materials to a child with visual and/or physical limitations. Black markers, large crayons, special grips (which may be as simple as tape wrapped around the marker to make it more graspable), adapted computer keyboards and/or screens with large print and picture display, head-sticks or laser pointers that allow a child or adult who cannot use his hands to use a keyboard with head movements, adapted braillers with extended keys—these are just some of the ways that a child or adult who may have difficulty writing may be aided in doing so.
- Provide sign language for a child who is deaf and being read to. This will allow real access to the language being represented by the print or braille. Ideally, the parents or the teachers will know sign language fluently and will have the skills to comment on the child's interests as well as sign the story. Even learning the most salient signs in the book will be helpful to the child.
- Adapt the language level and concepts in standard textbooks and reading materials for the older child or adult who is deaf-blind. These need to suit the unique understanding of the particular child. As the child grows in age and experience, her interests will often exceed her reading ability. This does not mean that her reading experience should be limited. With adapted materials, each child can read about subjects and ideas that are interesting. The child will thus be appropriately challenged to continue to expand her concepts and reading abilities. The fields of Deaf Education and English as a Second Language have much to offer in the way of materials and methods of teaching those for whom English is not the first language. Teachers of children who are deaf-blind need similar knowledge of how to assess a child's syntactical structures, vocabulary, and idiomatic understanding; how to adapt materials accordingly; and how to help a child progress in these areas. The help of a deaf-blind specialist will often be necessary to accurately measure the reading skills of a child who is deaf-blind and to design appropriate instructional strategies.

Accessibility also means that the child is physically able to get the materials and is encouraged to do so. Each classroom should have a library where books are displayed at a level where the children can reach them. Writing and drawing materials should also be accessible. In addition, the child should have time to use these materials. In the home, too, there can be a labeled box, bin, or shelf designated for books, pictures and related materials.

Connection of literacy to experiences and interests

A child who is deaf-blind and who also may have additional disabilities usually has unique and limited experiences. Often such a child's world extends no further than the reach of her hands; her concepts are therefore very basic and concrete. The teacher must think about how to gradually expand the children's experiences and thereby assist them in building concepts about the world beyond themselves. Experiences become the vehicle for developing concepts, upon which language and literacy can be mapped.

The experience of a child who is deaf-blind differs so significantly from most children's experience that standard reading programs are not usually effective in the beginning stages of literacy learning. Reading and writing need to be meaningfully connected to the hands-on explorations, experiences, and interests of each child who is deaf-blind. Here are some ways to make those connections:

- **Use key vocabulary:** The first words a child learns to write and read are especially important. They will often determine whether

or not that child becomes excited about reading and writing as a key to future learning. If the teacher can listen carefully to a child and give the child words to read that match that child's own deepest concerns and excitements, then reading and writing will forever be connected with power and interest, and the child's motivation for learning will last well into the future. Literacy and its power will be unlocked. (Techniques for presenting key vocabulary can be found in Teacher by Sylvia Ashton-Warner.)

- **Use memory boxes or memory books:** Each time a child who is deaf-blind has a meaningful experience there is the possibility of documenting that experience in some way. This documentation can become the beginning of literacy. For a child with no vision, a "memory box," or a series of "memory boxes," can be made by saving objects associated with meaningful activities. A leaf, a stone, or a twig can bring back a memory of a walk in the park; a shell can help recall a trip to the beach; a straw, a cup, or a napkin can recall a meal in a restaurant, and so on. Bringing these things home or back to the classroom in a pocket, and keeping them in a box, can serve as a kind of diary. The box can become the source of many enjoyable conversations and is a real beginning of literacy. A similar book can be made by gluing or taping objects to pages or by using photographs or drawings for the child who can see them. Print or braille labels—first in the form of single words, later as simple sentences—can begin to give meaning to writing.
- **Write poetry:** Poetry-writing opportunities can help students enjoy language for its own sake and learn to play with words and word combinations. Magnetic poetry sets, in print or braille, can often stimulate students' creativity.
- **Write experience stories:** As the child begins to be interested in words and in their power to express things, short stories about the child's own experiences (written either in print or braille, as appropriate) are wonderful learning tools. These stories can be written together with the child and his classmates, drawing from them the meaningful aspects of each experience. (See Remarkable Conversations, pp. 195-196 and Perspectives in Education and Deafness, pp.36-38 for specific techniques for writing and using experience stories.)
- **Create journals:** Journal writing can begin very early for the child who is deaf-blind and is an important part of teaching the child confidence in her own ability to express herself. Even a single word brailled or printed, or a simple drawing, can constitute an exciting form of expression for a child. Journals, unlike more formal written work, should not be corrected, since correction can inhibit the child's enthusiasm. A short journal time every day is a valuable addition to a child's schedule. (See Remarkable Conversations, pp.199-200 for specific techniques for using journal writing.) Journals and logs can also be used during academic lesson times —in conjunction with science, math, literature, or social studies, for example—to reinforce learning and to make writing experiences relevant to each child's unique experiences.

Regular opportunities for independent use of reading and writing materials

Children with adequate vision routinely have the opportunity to scribble, draw, use computer keyboards, look at magazines, read signs, or thumb through books. In an interesting study, it was noted that while only 15 % of children entering school believe they can read, fully 90% believe they can write (Rebecca Edmiaston). Scribbling and drawing are a kind of proto-writing. In the child's mind, they are a form of expression equivalent to what grown-ups do when they write. Opportunities for independent use of materials build confidence. Parallel opportunities need to be provided for the child or adult who cannot see or who has low vision and for the one who has physical limitations. Very often teachers of children who are deaf-blind or who have multiple disabilities are reluctant to let the child have genuinely independent experiences of exploration. But these are necessary. Make the following resources available:

- Classroom or home library, with accessible materials, and regular free time to explore

- Time and opportunities to use writing and drawing materials—crayons, markers, paints—without teacher direction
- Adapted writing and drawing materials to accommodate for physical limitations (see above, under accessibility)
- Free use of drawing programs on a computer
- Free use of clay or playdough for a child who is blind (see Fukurai, S.)
- Texture-making materials (such as stylus, shells, stamps, wood, pastry rollers) for use with clay, playdough, or paper
- Opportunities (for the child who is blind) to play with and explore a slate and stylus and a Braillewriter when available

The child who is deaf-blind should have frequent visual and/or tactual access to others who are also engaging in free exploration of materials. Simply placing a child in front of some clay, and then sitting and watching while she uses it, will not be as useful to her as joining her in using clay for free expression. Without the social aspect, it becomes a task that has little meaning. Knowing that others also express themselves in a variety of ways gives motivation to the child and opens up more possibilities. Be extremely careful not to impose your own expectations on the child. Simply engage in her own form of expression and be gently attentive to whatever the child seeks to do by herself.

Summary

Literacy can unlock countless worlds for the child or adult who is deaf-blind. Each of us who knows someone who is deaf-blind can invent ways for him or her to expand their possibilities for reading and writing. We can begin by sharing with them our own reading and writing experiences and by making materials accessible for them. We can encourage self-expression with gesture, clay, scribble, braille, writing—whatever forms each person can use. We can also regard each experience that we share with a person who is deaf-blind as a potential opportunity for literacy—we can save an object from the experience, we can write a story about it along with the child or adult, we can draw a picture and encourage the child to draw a picture, and we can write a letter or an e-mail to them about the experience. The opportunities are numerous. We are all inventors. We have much to learn together and much excitement to share. As we seek to share literacy skills with those who are deaf-blind, we can be continually aware of, and respectful of, the doors that are being opened, not only for those who are deaf-blind, but also for those who can see and hear and who thus have the opportunity to find out about the experiences of people whose hands and bodies and eyes and ears know the world in unique ways.

For Further Reading

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Materials

Braille materials can be obtained from:

National Braille Press
88 St. Stephen Street
Boston MA 02115
(800) 548-7323
Fax: (617) 437-0456
http://www.npb.org

American Foundation for the Blind
11 Penn Plaza, Suite 300
New York, NY 10001
(212) 502-7600
(800) 232-5463
http://www.afb.org

High-interest, low vocabulary materials can be obtained from:

Gallaudet University Press
John Kessler, Sales Representative
5801 South Ellis
Chicago, IL 60637
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http://www.gupress.gallaudet.edu

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